

# HABITAT MANAGEMENT GUIDELINES

## FOR NORTHEASTERN HERPETOFAUNA

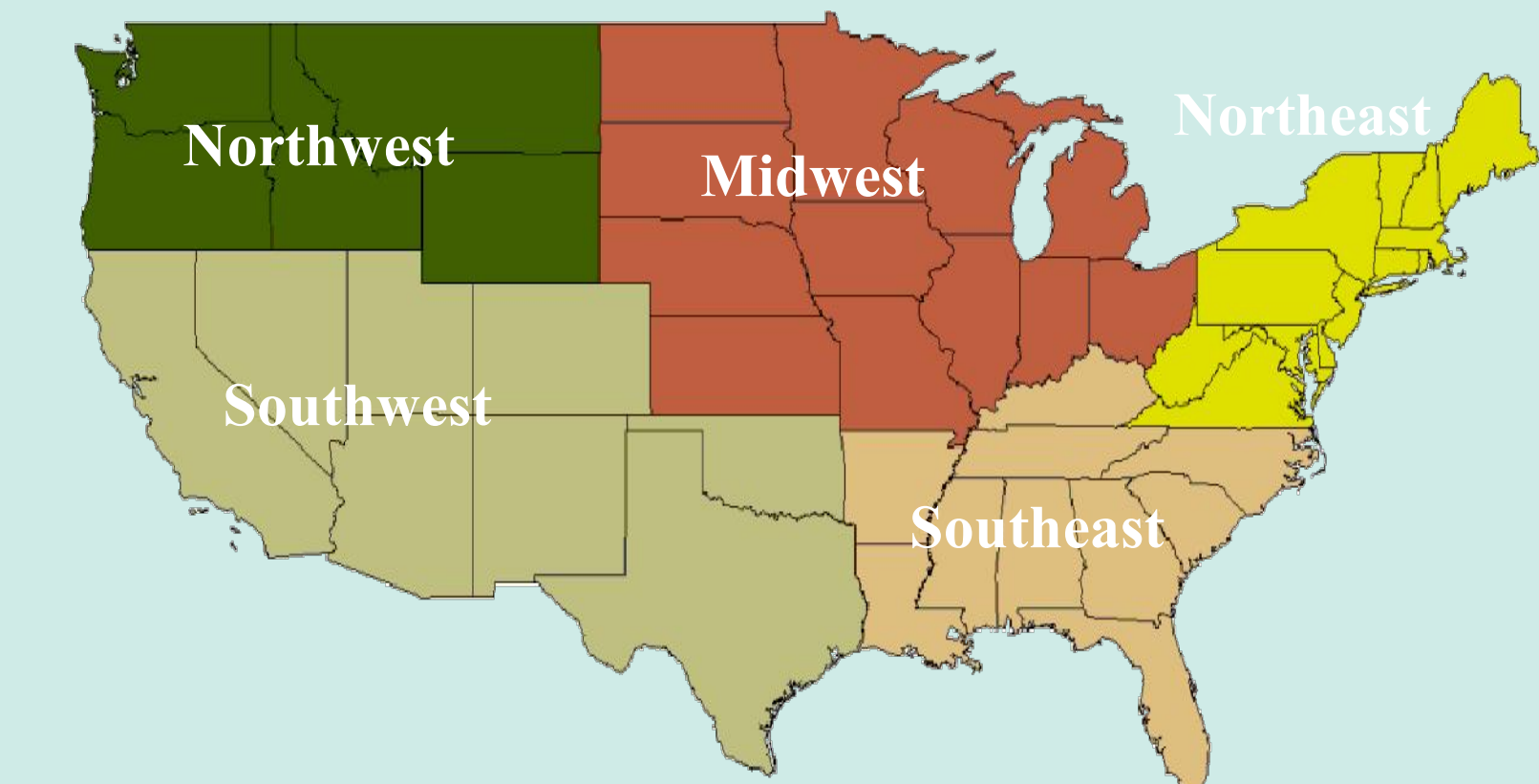
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### Abstract

Except for a few rare species, resource managers generally do not consider amphibians and reptiles when developing habitat management strategies. In order to fill this void, Partners in Amphibian and Reptile Conservation (PARC) sponsored a 3-day workshop in Chicago in 2001 to develop habitat management guidelines (HMGs) specifically for herpetofauna with land managers and private landowners as the primary audience. The group divided into teams representing five geographic regions of the U.S. with the goal of describing the major habitats within each region along with its associated herpetofauna.



HMGs are being developed for each region.

Thirteen habitat types which range from small urban habitats to large natural areas and contain a total of 155 species of herpetofauna were described for the northeastern states (Table I). The final HMGs will include a discussion of conservation practices that are specific to each habitat type and that would protect or enhance the habitat for amphibian and reptile populations in these habitats. PARC expects the HMGs will inform land managers of methods that will help lessen the impact on amphibians and reptiles of land use practices such as agriculture, timber harvest, management for other species and even lawn care.



Fowler's Toad (*Bufo fowleri*)  
Photo by Ed McGowan



Hognose Snake (*Heterodon platirhinos*)  
Photo by Jesse Jaycox

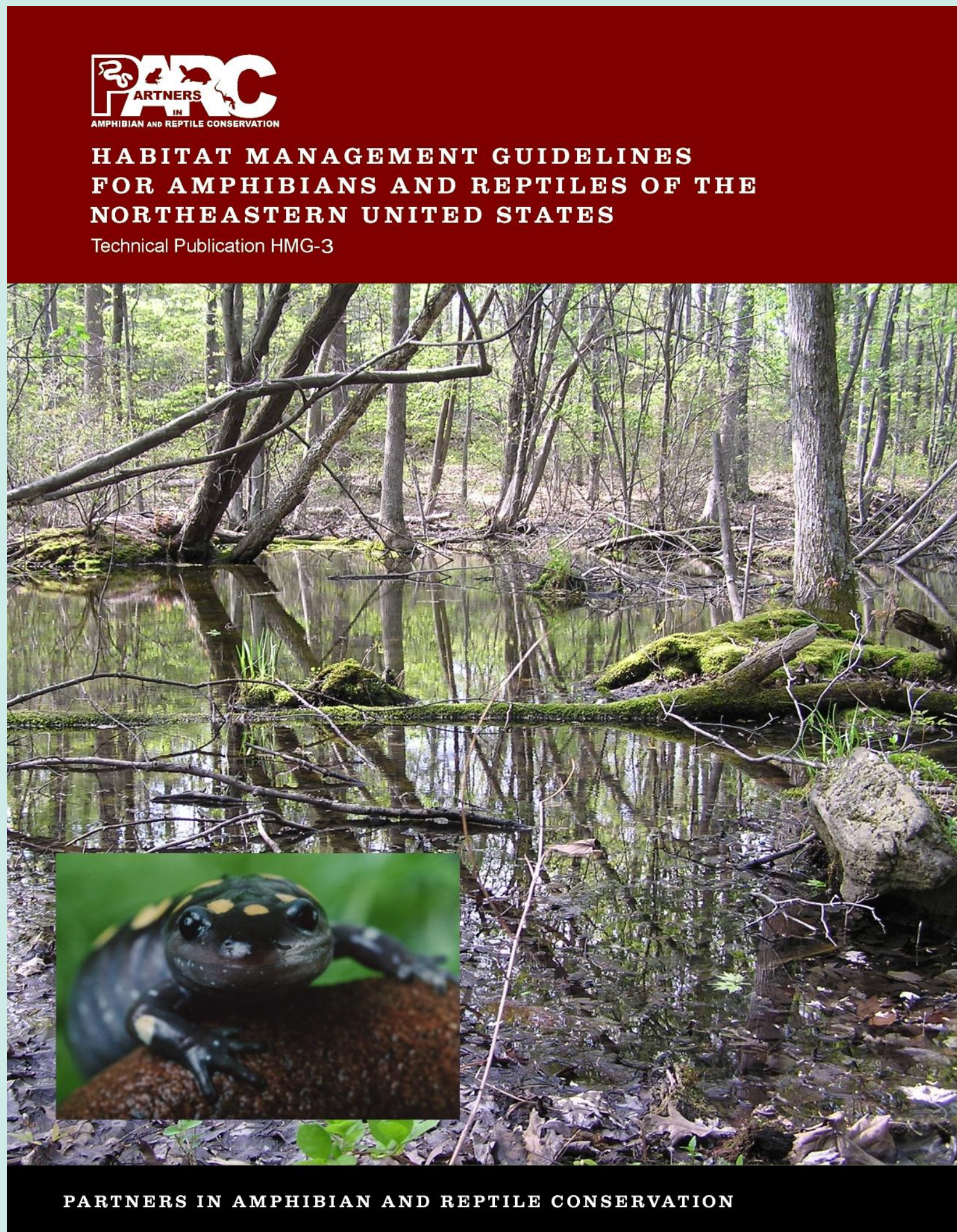
### Table I. Habitat types in NEPARC area.

**Aquatic** habitat types include

- A. Seasonal Wetlands
- B. Permanent Wetlands
- C. Small Streams, Springs, and Seepages
- D. Rivers
- E. Estuarine and Marine

**Terrestrial** habitat types include

- F. Mesic Upland Forests
- G. Spruce and Fir forests
- H. Xeric Upland Forests
- I. Grasslands and Old Fields
- J. Rock Outcrops and Talus
- K. Caves and Karst
- L. Agricultural Lands
- M. Urban and Residential



HMG for northeastern U.S. is scheduled for publication by June 2006.



The Northeast region of the United States supports at least 86 species of amphibians (29 frogs, 57 salamanders ) and 68 species of reptiles (25 turtles, 9 lizards, 34 snakes).

Species	Common Name	Seasonal Wetlands	Permanent Wetlands	Rivers	Estuarine / Marine	Mesic Upland Forest	Xeric Upland Forest	Grasslands / Old fields	Rock Outcrops / Talus	Caves and Karst	Agricultural	Urban
<b>Amphibians: Frogs and Toads</b>												
<i>Acris crepitans</i>	Northern Cricket Frog	S	P	S	P	P	M		S			
<i>Acris gryllus</i>	Southern Cricket Frog	P	P		P	P	M					
<i>Bufo americanus</i>	American Toad	P	P		S	P	P		S	S		
<i>Bufo fowleri</i>	Fowler's Toad	P	P			P	P		S			
<i>Bufo quercicus</i>	Oak Toad	P	P			P	P					
<i>Bufo terrestris</i>	Southern Toad	P	P			P	P					
<i>Gastrophryne carolinensis</i>	Eastern Narrow-mouthed Toad	P	P			P	S					
<i>Hyla andersonii</i>	Pine Barrens Treefrog	P	P			P	P		S			
<i>Hyla chrysoscelis</i>	Cope's Gray Treefrog	P	P			P	P		S			
<i>Hyla cinerea</i>	Green Treefrog	P	P		S	P	P		M	S		
<i>Hyla femoralis</i>	Pine Woods Treefrog	P	P			P	P					
<i>Hyla gratiosa</i>	Barking Treefrog	P	P			S	P					
<i>Hyla squirella</i>	Squirrel Treefrog	P	P			S	P					
<i>Hyla versicolor</i>	Gray Treefrog	P	P			S	P					
<i>Pseudacris brachyphona</i>	Mountain Chorus Frog	P	P			P	M	P	M	S		
<i>Pseudacris bimaculata</i>	Brimley's Chorus Frog	P	P			P	P					
<i>Pseudacris crucifer</i>	Spring Peeper	P	P		M	P	M	S	S		M	
<i>Pseudacris feriarum feriarum</i>	Upland Chorus Frog	P	P			P	P		S	M		
<i>Pseudacris feriarum kalmi</i>	New Jersey Chorus Frog	P	P			P	P		S	M		
<i>Pseudacris nigrita</i>	Northern Chorus Frog	P	P			P	P					
<i>Pseudacris ocularis</i>	Little Grass Frog	P	P			S	P					
<i>Pseudacris triseriata</i>	Western Chorus Frog	P	P			P	P					
<i>Rana catesbeiana</i>	American Bullfrog	P	P			S	P			M	M	
<i>Rana clamitans</i>	Green Frog	M	P			P	P		S		M	M
<i>Rana palustris</i>	Pickering Frog	P	P		S	M	S					
<i>Rana pipiens</i>	Northern Leopard Frog	S	P	P		M	S		P	M		
<i>Rana septentrionalis</i>	Mink Frog	P	P			M	S					
<i>Rana sphenocephala</i>	Southern Leopard Frog	P	P			S	P		S	S		
<i>Rana sylvatica</i>	Wood Frog	P	S	M		P	S					
<i>Rana virgatipes</i>	Carpenter Frog	P	P			P	P					
<i>Scaphiopus holbrookii</i>	Eastern Spadefoot	P	P				P	P		S		
<b>Habitat codes</b>												
P = Primary												
S = Suitable												
M = Marginal												

Example of spreadsheet showing species by habitat type:

### Who should use the HMGs?

- Private landowners
- State and federal land agencies

### The HMGs include:

- A list of all species in the Northeast
- Habitat associations of northeast species
- Threats to habitats and species
- Recommendations for both "Maximum compatibility" and "ideal" ways to manage for reptiles and amphibians.

"Maximizing Compatibility" guidelines are for landowners and land managers who wish to contribute to the conservation of these animals while primarily managing their land for other uses, such as timber production, hunting, other recreation, grazing, development, and agriculture.

"Ideal" guidelines are for landowners and land managers desiring to make amphibian and reptile conservation a primary objective, as might be desired on nature preserves, wildlife refuges, and private lands whose owners wish to optimize herpetofaunal diversity and abundance.

Species	Common Name	NatureServe Global Rank	Conservation Status (USFWS)	Connecticut	Delaware	District of Columbia	Maine	Maryland	Massachusetts	New Hampshire	New Jersey	New York	Pennsylvania	Rhode Island	Vermont	West Virginia
<b>Reptiles: Turtles</b>																
<i>Caretta caretta</i>	Loggerhead Sea Turtle	3	N	N	N	N	N	N	N	N	N	N	N	N	N	N
<i>Chelonia mydas</i>	Green Sea Turtle	3	N	N	N	N	N	N	N	N	N	N	N	N	N	N
<i>Dermochelys coriacea</i>	Leatherback Sea Turtle	1	N	N	N	N	N	N	N	N	N	N	N	N	N	N
<i>Eretmochelys imbricata</i>	Hawksbill Sea Turtle	1	N	N	N	N	N	N	X	N	N	N	N	N	N	N
<i>Lepidochelys kempii</i>	Kemp's Ridley Sea Turtle	1	N	N	N	N	N	N	N	N	N	N	N	N	N	N
<i>Apalone mutica</i>	Smooth Softshell	5										N				N
<i>Apalone spinifer</i>	Spiny Softshell	5						N	I	N	N	N	N	N	N	N
<i>Chelydra serpentina</i>	Snaping Turtle	5	N	N	N	N	N	N	N	N	N	N	N	N	N	N
<i>Chrysemys picta</i>	Painted Turtle	5	N	N	N	N	N	N	N	N	N	N	N	N	N	N
<i>Clemmys guttata</i>	Spotted Turtle	5	N	N	N	N	N	N	N	N	N	N	N	N	N	N
<i>Deirochelys reticularia</i>	Chicken Turtle	5														N
<i>Emydoidea blandingii</i>	Blanding's Turtle	4				N	N	N	N	N	N					
<i>Glyptemys insculpta</i>	Wood Turtle	4	N	X	N	N	N	N	N	N	N	N	N	N	N	N
<i>Glyptemys muhlenbergii</i>	Box Turtle	3	N	N	X	N	N	N	N	N	N	N	N	N	N	N
<i>Graptemys geographica</i>	Northern Map Turtle	5	N	N		N			N	N	N	N	N	N	N	N
<i>Graptemys ouachitensis</i>	Ouachita Map Turtle	5														N
<i>Kinosternon bauri</i>	Striped Mud Turtle	5														N
<i>Kinosternon subrubrum</i>	Eastern Mud Turtle	5	N	N	N	N	N	N	N	N	N	N	N	N	N	N
<i>Malaclemys terrapin</i>	Diamond-backed Terrapin	4	N	X	N	N	N	N	N	N	N	N	N	N	N	N
<i>Pseudemys concinna</i>	River Cooter	5														N
<i>Pseudemys rubriventris</i>	Northern Red-bellied Turtle or Cooter	5	E	N	N	N	N	N	N	I	N	N	N	N	N	N
<i>Sternotherus minor</i>	Loggerhead Musk Turtle	5														N
<i>Sternotherus odoratus</i>	Stinkpot	5	N	N	N	N	N	N	N	N	N	N	N	N	N	N
<i>Terrapene carolina</i>	Eastern Box Turtle	5	N	N	N	N	N	N	N	N	N	N	N	N	N	N
<i>Trachemys scripta</i>	Slider	5	I	I	I	I	I	I	I	I	I	I	I	I	I	N
<b>Distribution codes</b>																
N = Native																
I = Introduced																
X = Extirpated																
? = Unknown																

Example of spreadsheet showing species by state:



Northern red Salamander (*Pseudotriton ruber*)  
Eating a Slimy Salamander (*Plethodon glutinosus*)  
Photo by Jack Heath

### Goals of the HMGs and PARC:

When applied on the ground as general management principles, these guidelines will promote conservation efforts/activities to:

1. keep common amphibian and reptile species common;
2. stem the decline of imperiled species;
3. guide the restoration of amphibian and reptile habitats while benefiting many other wildlife species; and
4. reduce the chances that additional species will be added to endangered species lists.



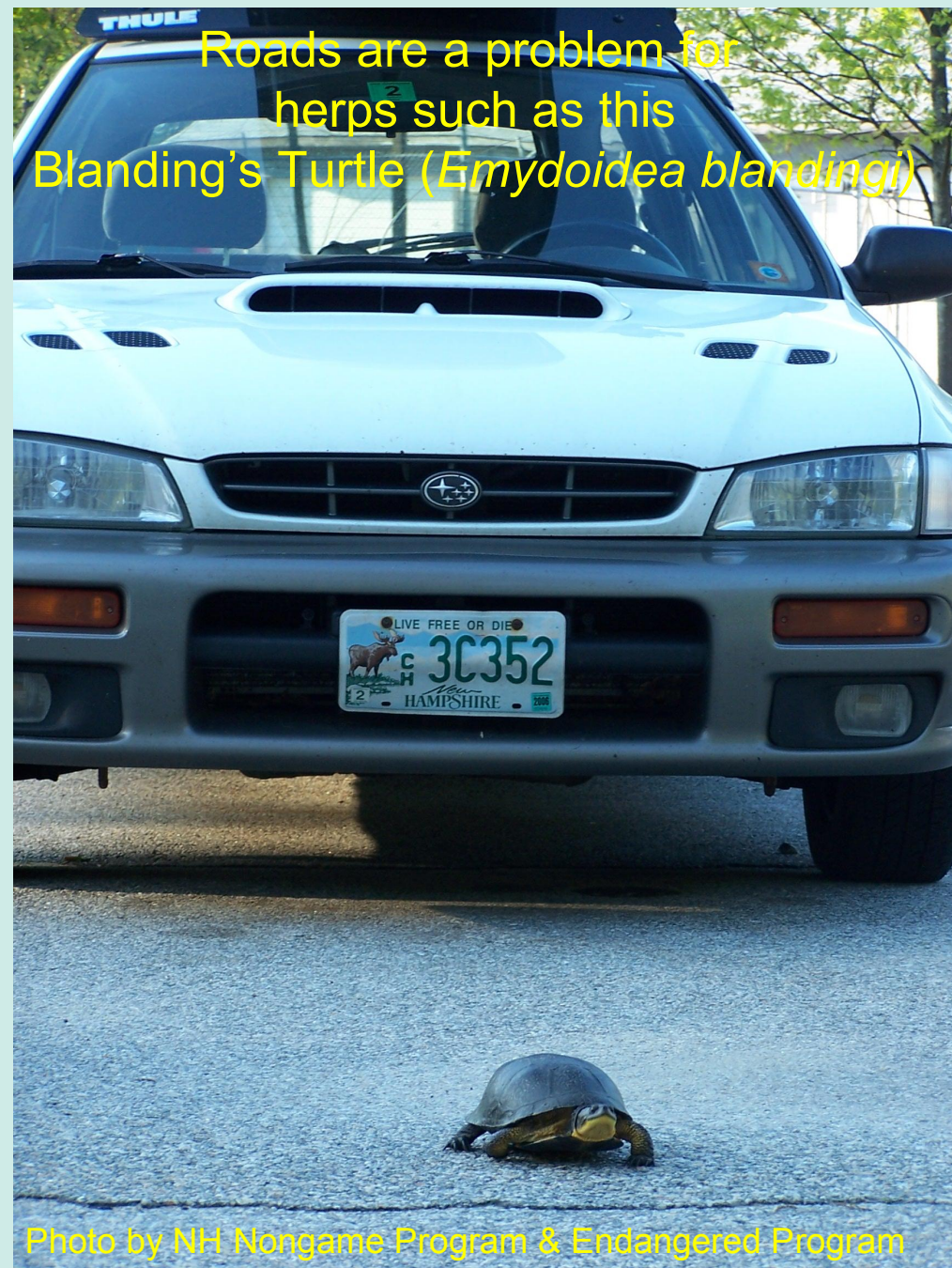
Seasonal wetland surrounded by forest  
Photo by Michael Marchand



Prescribed fire can be used as a management tool in wetlands  
Photo by Sarah Sisson



Red Elf stage of Red-spotted Newt (*Notophthalmus vireescens*)  
Photo by Kirstin Breisch



Roads are a problem for herps such as this Blanding's Turtle (*Emydoidea blandingii*)  
Photo by NH Nongame Program & Endangered Program

### Acknowledgements

We thank the PARC HMG steering committee, the NEPARC steering committee, Joe Mitchell, Kurt Buhlmann, John Ozard, and biologists from each of the 13 northeastern states plus the District of Columbia for providing species list and reviewing habitat preferences.

For more information, see: [www.parcplace.org](http://www.parcplace.org).